

EXHIBIT B

EXHIBIT B-1

Vegetation Management – Job Aid		
Title: System Public Safety and Reliability Reference Guide		
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System Public Safety and Reliability Reference Guide

Purpose:

To increase public safety and reliability (PS&R) in the PG&E service territory by reducing vegetation-related outages.

Method:

Use vegetation outage data to identify line sections that have a history of vegetation-related outages whether due to whole or partial tree failure, branch failure, or palm fronds.

Line sections (called protection zones) matching the above description will be patrolled using criteria based upon Average Interruption Frequency Index (AIFI), Customers Experiencing Multiple Interruption (CEMI), Average Interruption Duration Index (AIDI), or any mix of these indexes.

Targeted prescriptions will be determined for each protection zone using the System PS&R Species-Specific Prescription Guide. Other factors to consider may include the zone's vegetation outage history, current site conditions, and local knowledge.

After the necessary permission from tree owners and authorizing agencies is obtained, tree work will be generated and issued to the designated PG&E tree contractor.

Preparation:

1. Research and compile project information using ILIS data, GIS or DART, vegetation management (VM) outage reports, screenshot of current year Project Management Database (PMD) comments and dates, etc. Complete the Project Cover Sheet and email to the local Vegetation Program Manager, pre-inspection supervisor, System PS&R DMS and Project Coordinator (PC). Save this information in the project folder located on the S: drive¹.
2. Contact local VM resource (if applicable) for information about:
 - a. Ownerships
 - b. Agency issues
 - c. Customer issues
 - d. Municipal or local ordinances
 - e. Endangered species or other environmental issues such as Limited Operating Periods (LOPs).
3. With input from the PC and in specified areas, conduct a review of the CNDDDB to identify potential environmental concerns that will need to be addressed during project preparation.
4. Conduct a quick drive-through (approximately 1 hour maximum) of the protection zone. If reasonable and easily accessible, find past outage locations on the outage reports. Note exact species, site conditions, microclimate, and wire type and configuration (tree wire, bare wire; vertical construction, etc.). Note adjacent species, site conditions and any other information pertinent to identifying the project prescription. Also note any recent hardware changes (e.g. a new fuse installed subsequent to the last outage). If new hardware is found, contact the designated PC for guidance. Lastly, verify the length of the protection zone in the field and adjust project forecast units in PMD if appropriate.

¹ S:\VMShared\Reliability\2014 System Reliability Project Folders\Division

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- When determined necessary, and for all Phase 2 projects (PS&R projects that have been completed in the past but have continued to experience a high number of vegetation-related outages), contact the PC to identify a project prescription to address field conditions or species that are not addressed in the System PS&R Species-Specific Prescription Guide.

System Public Safety and Reliability Work Packet and Tree Record Set-up:

There is no preload for PS&R work; therefore, a new record will need to be created for each location where PS&R work is prescribed.

First, a new work packet will need to be created. To create a new work packet, enter the following fields:

- Click the "New" button from *Work Folder*. A new window should pop up. Enter:
 - Account Type: "Reliability" and choose "Distribution."
 - Division: The division in which the work is being performed.
 - Project ID: Enter the 6 digit project number from Reliability PMD. For example, if PMD says 2013-123456, the Project ID would be 123456.

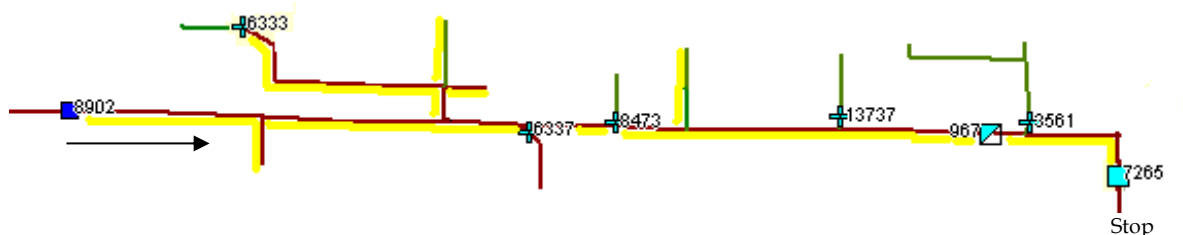
After the work packet is created, a blank location record will appear. Edit the record to reflect that it is a PS&R location:

- Source Side Routing #: Enter 101020.
- SSD #: Enter the SSD for the protection zone. This number does not change even after passing through closed switches or solid-blade disconnects.
- Location Route Number: Start with 10 and continue in increments of 10 for PS&R locations.
- Tag Type: "Reliability."
- Tag #: Enter the 6 digit project number from System Reliability PMD. For example, if PMD says 2013-123456, the tag number would be 123456.
- Trim Codes: Only use Facility Protection Trim Codes.
- Clearance: In general, enter 99. For overhang work with specific clearance prescriptions, enter that clearance.

Field:

- Inspect the entire protection zone from the assigned protection device to the next protection device (fuse, recloser or sectionalizer) as it exists in the field during the inspection. Patrol hard taps and through closed solid blade disconnects.² Always consult the Project Coordinator if the protection zone includes an open switch or open solid blade disconnect with the same circuit on both sides.
- Stop at protection devices or end of line. (See example below.)

The assigned device below is recloser 8902. Stopping points are fuses, ends of line and open switch 7265, which beyond has a different name. Area to be inspected is shown in yellow.



² Patrol through manually operated switches & open solid blade disconnects unless they are open and the circuit on the other side has a different name.

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3. All work prescribed should be based on the targeted prescription for that protection zone unless approved by the PS&R Project Coordinator.
4. When prescribing work, consider construction and hardware types: Continuous sections of tree wire can reduce outage potential from small branch failure but increase outage duration where large branch/tree failure would damage the conductor and equipment.
5. Individual tree prescriptions are to be based on the current Facility Protect and Work Difficulty Classification Procedure.³ **Very specific comments must be made to direct the tree crew to achieve the desired outcome.** This is particularly true for PS&R work since it is very different than routine. Do not assume the tree crew knows exactly how the tree should be worked. Below are examples of some common PS&R situations, trim codes and acceptable supporting comments:

Situation	Trim Code	Supporting Comment
150' redwood, trunk 15' from conductors	FP-Ov B (FOB)	Remove OV branches above line, leave smaller, non-OV branches
150' redwood, trunk 6' from conductors	FP-Ov B (FOB)	Remove OV branches above line and dead wood to sky
75' fir, on cut bank, 15' above Rd, heavy lean over lines	FP-Rmv# B (F2B)	Chip and remove brush, leave big wood safely out of roadway
75' fir, on cut bank, 50' above Rd, heavy lean toward lines	FP-Major A (FBA)	Remove top 1/4
Small to med redwood, no rear branches due to density, required trimming would leave very few branches	FS-R#B+Trt (F2D)	Chip and remove brush, leave big wood on site.
<u>Requires Project Coordinator approval:</u> Fan palm with canopy overhanging conductors	FP-Ov A (FOA)	Remove skirt and fronds up to 45 degree angle, remove all fruit stalks.
<u>Requires Project Coordinator approval:</u> Fan palm with canopy above and to the side of the conductors with the potential for fronds to blow into the conductors	FP-Trim A (FAA)	Remove skirt and fronds up to 45 degree angle, remove all fruit stalks.

6. **Customer communication and education is crucial to the success of PS&R patrols.** Every effort should be made to contact the customer and clearly explain the scope of work being prescribed including the scope of clean up and the amount of debris likely to be left behind. Furthermore, a signed Tree Work Authorization Form shall be obtained from the property owner for all major facility protect, overhang, and removal work. The exception to this may be where only a few branches are prescribed to be removed and the customer has provided a verbal approval of the work. Contact the designated PC for guidance.
7. Customer contact information should be entered for any safety issues or production impacts, such as dog, notify first, locked gate, concerned customer alerts and endangered species.

³ This document can be found in the VM document library.

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8. Refusals (difficult or non-responsive customers) will be tracked in the Issue Tracking System (ITS). If a customer refuses the initial prescription, PS&R PI may negotiate for the next best prescription that would reduce the potential of an outage. If the customer refuses work entirely, limits work so as to severely limit PS&R results of trim, or fails to respond to any contact attempts, refer to the PS&R Refusal Process Job Aid.
9. Trees identified outside the scope of the PS&R patrol during the course of inspection should be documented on an Observation Report and submitted to the System PS&R pre-inspection supervisor to be passed on to the local PG&E Vegetation Program Manager.
10. Locations requiring a riparian review should be identified with an R-review restriction in the tree record. All riparian review locations will be processed similarly to that of routine compliance trees. In some divisions, however, trees in riparian areas will not be worked. Contact the designated PC for guidance.

Post-Patrol and Reporting:

1. Submit a completed Reliability Activity Summary Report (RASR) weekly to the System PS&R DMS.
2. Work shall be transmitted a minimum of once daily. Notify the System PS&R DMS when projects are checked in.
3. The PS&R tree contractor shall contact PI prior to the start of work to review project details. This can be in the form of a phone call or a field meeting (i.e. project tailboard).
4. When the project is complete, return project folders to the System PS&R DMS (via company mail) with all reports, notes and other relevant documentation. These documents should include:
 - Maps
 - VM Observation Reports and ILIS reports
 - Original signed TWAs
 - Original refusal forms (if applicable)
 - Any additional permits (e.g. CalTrans paperwork , city/county encroachment permits)
 - Any correspondence with the customer

Company Mail Address:

Vegetation Management
System Public Safety and Reliability
4801 Oakport St
Oakland Service Center

Quality Control:

PS&R PI supervisor shall conduct a minimum of two audits per month on system PS&R work under their supervision. All completed audits should be retained locally.

Overhang Discussion:

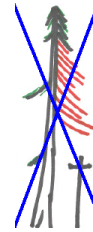
1. Follow the current version of the Facility Protect and Work Difficulty Classification Procedure.
2. Prescribe work for limbs overhanging at least two conductors that are either long enough to cross phase; or
3. Prescribe work for overhanging limbs that are large enough to cause damage to the facilities should they fail.
4. Do not prescribe work for small diameter top branches and/or branches not overhanging the conductors.

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5. Consider factors such as Scenic Roadways and other highly visible areas, the presence of tree-wire, and the degree of risk posed by branches that will be left on the tree.
6. Removal should be pursued if required pruning will leave few live branches. For redwoods, a modified overhang prescription may be considered instead of a removal.



The red-colored branches above are examples of branches that should be listed for overhang work.



Above is an example of a tree that should be listed for removal instead of overhang work.

Always apply the species-specific prescriptions unless an exception for local circumstances is made.

EXHIBIT B-2

Vegetation Management – Job Aid			
System Public Safety and Reliability Species-Specific Prescription Guide			
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System PS&R Species-Specific Prescription Guide

Objective:

To Increase safety and system reliability by reducing vegetation-related outages.

Description:

These species-specific prescriptions guide Pre-Inspection personnel in making decisions about whether to conduct tree work on trees near PG&E facilities. The prescription and Pre-Inspector knowledge and experience are applied when making these decisions that:

- Address trees or portions of trees that threaten PG&E facilities;
- Address tree limbs that occur over two or more conductors or that are large enough to break a single conductor;
- Assess significance of lean by evaluating actual lean, tree structure, defects, soils, slope, wind exposure, stand position, previous tree and/or stand failures;
- Address weak line-side structure by evaluating angle of attachment, defects, exposure, overall tree structure, and previous tree and/or stand failures.

Where a species or site-specific circumstances fall outside the prescription:

- Pre-Inspection shall communicate with Project Coordinator to gain approval when species outside the prescription are identified for work.
- Pre-Inspection shall communicate with Project Coordinator for regional considerations. Prescription variances may be applied to address local issues. (Examples include snow-load, land-slide effects, high visibility, and special species considerations.)

Refer to the following prescription below as a guide to prescribe tree work. Each species' common name and PG&E code is followed by the prescription. *All prescriptions assume that the portion of the tree being addressed is capable of striking PG&E facilities if it falls.*

Pacific Madrone (Madr):

- All sizes with significant lean toward PG&E facilities.

Tanoak (Tan):

- All sizes with significant lean toward PG&E facilities.

Douglas Fir (Fird):

- All sizes for over-hanging limbs (OV).
- All sizes with significant lean toward PG&E facilities.

Redwood (Redw):

- All sizes for OV.
- R2 or larger with co-dominant stems or multi-tops, the fork leans toward PG&E facilities and exhibits included bark or weak attachment.

Interior and Coast Live Oak (Oakl and Oakc):

- All sizes for OV.
- All sizes with significant lean toward PG&E facilities.

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Red and White Alder (Aldr and Alde):

- All sizes with significant lean toward PG&E facilities.

California Bay Laurel (Bay):

- All sizes with significant lean toward PG&E facilities.

Monterey and Bishop Pine (Pinm and Pinb):

- All sizes for OV.
- All sizes with significant lean toward PG&E facilities.

Blue Gum Eucalyptus (Eucb):

- Mature or Overmature (M/OM) OV.
- Weak, line-side limb attachments.
- Up to 20" DBH with significant lean toward PG&E facilities.

Valley Oak (Oakv):

- M/OM OV.

Black Oak (Oakk):

- All sizes for OV.
- All sizes with significant lean toward PG&E facilities.

Ponderosa Pine (Pinp):

- Up to 14" DBH and 5:1 or greater height to diameter ratio for snow-load.
- All sizes with defects affecting in excess of 25% of diameter of tree at defect.

Monterey Cypress (Cypm):

- All sizes for OV.
- M/OM with weak, line-side limb attachments or bole structure.

Gray Pine (Ping):

- All sizes for OV.
- Weak, line-side limb or bole structure or long line-side spars.
- All sizes with significant lean toward PG&E facilities.

Incense Cedar (Cedr):

- All sizes for OV.
- Up to 20 DBH for trunk failure.
- M/OM with co-dominant stems where fork occurs in the lower 1/3 of total tree height, the fork leans toward PG&E facilities and exhibits included bark.

Deodora Cedar (Deod):

- All sizes for OV.

Cottonwood (Cott):

- M/OM OV.
- Weak, line-side limb structure.

Willow (Will):

- Weak, line-side limb attachments.
- All sizes with significant lean toward PG&E facilities.

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Fan Palm (Palf):

- The preference is to remove palms.
- If the palm cannot be removed, skirting may occur on an exception basis with Project Coordinator approval. The trim type for skirting is FAB.
- List palms when one of the following criteria is met:
 - Any palm that has caused an outage; or
 - Any palm that has been or will be trimmed on routine and is not directly below (under) the conductors; or
 - All other palms where:
 - Trunk is within 50 feet of conductors; and
 - Crown is higher than the conductors; and
 - Palm crown is within 45 degrees of conductors (see far left diagram below).
- Pre-inspectors shall enter the distance from the conductor and height of the palm above the conductor in the comments.

